EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	457	436/79.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2008/01/01 18:33
L3	394	436/79.ccls.	US-PGPUB; USPAT	OR	ON	2008/01/01 18:33
L4	368	436/79.ccls.	USPAT	OR	ON	2008/01/01 18:34
L5	11	bapta and "544".clas.	USPAT	OR	ON	2008/01/01 18:44
L6	22	bapta and "546".clas.	USPAT	OR	ON	2008/01/01 18:44

```
=> d his

     (FILE 'HOME' ENTERED AT 09:56:09 ON 01 JAN 2008)
     FILE 'CA' ENTERED AT 09:56:15 ON 01 JAN 2008
L1    6982 S (NEAR OR ADJACENT OR PROXIM?)(3A)MEMBRANE
L2  185032 S (CALCIUM OR CA OR CA2 OR MAGNESIUM OR MG2 OR INDICATOR OR
           FLUOROCHRO? OR FLUOROPHOR?)(5A)(DETECT? OR DETERMIN? OR REPORT?
           OR OPERAT? OR TEST? OR ANALY? OR ASSAY? OR MEASUR? OR MONITOR? OR
           SENSE# OR SENSOR OR SENSING OR PROBE# OR PROBING OR QUANTITAT? OR
           QUANTIF? OR QUANTA?)
L3      16 S L1(4A)(INDICATOR OR FLUOROPHOR? OR FLUOROCHRO?)
L4     218 S L1 AND L2
L5      34 S L1 AND(PIPERAZ? OR ZWITTER?)
L6     179 S L4 AND PY<2004
L7      43 S L1(8A) L2
L8       6 S L6 AND FFP?
L9      16 S L4/TI,IT,ST
L10     87 S L3,L5,L7-9
     FILE 'BIOSIS' ENTERED AT 10:16:02 ON 01 JAN 2008
L11     82 S L10
     FILE 'MEDLINE' ENTERED AT 10:16:40 ON 01 JAN 2008
L12     68 S L10
     FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 10:17:19 ON 01 JAN 2008
L13    113 DUP REM L10 L11 L12 (124 DUPLICATES REMOVED)

=> d bib,ab,kwic l13 1-113

L13  ANSWER 35 OF 113  CA  COPYRIGHT 2008 ACS on STN
AN   139:347654  CA
TI   Near-membrane iminocoumarin-based low affinity fluorescent Ca2+
     indicators
AU   Liepouri, F.; Deligeorgiev, T. G.; Veneti, Z.; Savakis, C.;
     Katerinopoulos, H. E.
CS   Department of Chemistry, University of Crete, Crete, 71 409, Greece
SO   Cell Calcium (2002), 31(5), 221-227
AB   Two new potential near-membrane iminocoumarin-based fluorescent Ca2+
     indicators were synthesized and the spectral profiles of their free and
     Ca2+ bound forms were studied.  The probes incorporate in their BAPTA-
     related structures, the 3-(benzimidazolyl)iminocoumarin or the 3-
     (benzothiazolyl)iminocoumarin moiety, substituted at the imino nitrogen
     with an n-dodecyl lipophilic chain.  The compds. are excited with
     visible light and have Ca2+ dissocn. const. values of 5.50 and 4.49 μM,
     resp., the highest reported to date in the literature.  Fluorescence
     spectra studies indicated a clear shift in their excitation wavelength
     maxima upon Ca2+ binding along with changes in fluorescence intensity
     that enable the compds. to be used as ratiometric near-membrane, low Ca2
     + affinity probes.

L13  ANSWER 66 OF 113  CA  COPYRIGHT 2008 ACS on STN
AN   125:52738  CA
TI   Near-membrane [Ca2+] transients resolved using the Ca2+ indicator FFP18
AU   Etter, Elaine F.; Minta, Akwasi; Poenie, Martin; Fay, Fredric S.
CS   Dep. Physiology Biomedical Imaging Group, Univ. Massachusetts Med.
```

Center,orcester, MA, 01605, USA
SO Proceedings of the National Academy of Sciences of the United States of America (**1996**), 93(11), 5368-5373
AB Ca2+-sensitive processes at cell membranes involved in contraction, secretion, and neurotransmitter release are activated in situ or in vitro by Ca2+ concns. [(Ca2+]) 10-100 times higher than [**Ca2**+] **measured** during stimulation in intact cells. This paradox might be explained if the local [Ca2+] at the cell membrane is very different from that in the rest of the cell. Sol. Ca2+ indicators, which indicate spatially averaged cytoplasmic [Ca2+], cannot resolve these localized, **near-membrane** [Ca2+] signals. **FFP18**, the newest **Ca2**+ **indicator** designed to selectively **monitor near-membrane** [**Ca2**+], has a lower Ca2+ affinity and is more water sol. than previously used membrane-assocg. Ca2+ indicators. Images of the intracellular distribution of **FFP18** show that >65% is located on or **near** the plasma **membrane**. [Ca2+] transients recorded using **FFP18** during membrane depolarization-induced Ca2+ influx show that **near-membrane** [Ca2+] rises faster and reaches micromolar levels at early times when the cytoplasmic [Ca2+], recorded using fura-2, has risen to only a few hundred nanomolar. High-speed series of digital images of [**Ca2**+] show that **near-membrane** [**Ca2**+], **reported** by **FFP18**, rises within 20 ms, peaks at 50-100 ms, and then declines. [**Ca2**+] **reported** by fura-2 rose slowly and continuously throughout the time images were acquired. The existence of these large, rapid increases in [Ca2+] directly beneath the surface membrane may explain how numerous Ca2+-sensitive membrane processes are activated at times when bulk cytoplasmic [Ca2+] changes are too small to activate them.

L13 ANSWER 71 OF 113 CA COPYRIGHT 2008 ACS on STN
AN 125:7754 CA
TI **Near membrane** Ca2+ changes resulting from store release in neutrophils: detection by **FFP**-18
AU Davies, E. V.; Hallett, M. B.
CS Mol. Signalling Group, Univ. Wales, Cardiff, UK
SO Cell Calcium (**1996**), 19(4), 355-362
AB **FFP**-18 was incorporated into the inner face of the plasma membrane of human neutrophils by incubation with its acetoxymethyl ester. Conversion to the **Ca2**+ sensitive intracellular **indicator** was **monitored** by the change in excitation spectra. The fluorescence from extracellularly facing **FFP**-18 was quenched by the membrane impermeant ion Na2+. Ratio fluorescence measurement of **FFP**-18 under these conditions permitted the **detection** of **near membrane Ca2**+ changes resulting from the release of Ca2+ from intracellular stores. **Near membrane** and cytosolic **Ca2**+ changes were **measured** under conditions in which store release and Ca2+ influx were triggered by fMLP, thapsigargin or immune complexes. There were significant differences in the timing and magnitude of Ca2+ storage site deep within the neutrophil released by thapsigargin and fMLP, but Ca2+ near the inner face of the plasma membrane thus provides evidence for the existence of two distinct Ca2+ storage locations in neutrophils.

L13 ANSWER 74 OF 113 CA COPYRIGHT 2008 ACS on STN
AN 125:81153 CA

TI Synthesis and characterization of leakage resistant and **near membrane** fluorescent calcium **indicator** dyes
AU Vorndran, Charles
CS Univ. of Texas, Austin, TX, USA
SO (1995) 184 pp. Avail.: Univ. Microfilms Int., Order No. DA9617367 From: Diss. Abstr. Int., B 1996, 57(1), 62
TI Synthesis and characterization of leakage resistant and **near membrane** fluorescent calcium **indicator** dyes

L13 ANSWER 76 OF 113 CA COPYRIGHT 2008 ACS on STN
AN 124:4271 CA
TI New fluorescent calcium **indicators** designed for cytosolic retention or **measuring calcium near membranes**
AU Vorndran, Charles; Minta, Akwasi; Poenie, Martin
CS Dep. Zool., Univ. Texas, Austin, TX, 78712-1064, USA
SO Biophysical Journal (**1995**), 69(5), 2112-24
AB A new family of fluorescent calcium indicators has been developed based on a new analog of BAPTA called FF6. This new BAPTA analog serves as a versatile synthetic intermediate for developing Ca2+ indicators targeted to specific intracellular environments. Two of these new Ca2+ indicators, fura-PE3 and fura-**FFP18**, are described in this report. Fura-PE3 is a **zwitterionic** indicator that resists the rapid leakage and compartmentalization seen with fura-2 and other polycarboxylate calcium indicators. In contrast to results obtained with fura-2, cells loaded with PE3 remain brightly loaded and responsive to changes in concn. of cytosolic free calcium for hours. Fura-**FFP18** is an amphipathic indicator that to binds to liposomes and to cell membranes. Studies to be detailed later indicate that **FFP18** functions as a **near-membrane** Ca2+ **indicator** and that calcium levels **near** the plasma **membrane** rise faster and higher than in the cytosol.

L13 ANSWER 82 OF 113 CA COPYRIGHT 2008 ACS on STN
AN 120:293334 CA
TI **Detection** of changes in **near-membrane Ca2**+ concentration using a novel membrane-associated Ca2+ indicator
AU Etter, Elaine F.; Kuhn, Michael A.; Fay, Fredric S.
CS Med. Sch., Univ. Massachusetts, Worcester, MA, 01605, USA
SO Journal of Biological Chemistry (1994), 269(13), 10141-9
AB A Ca2+ indicator has been synthesized and characterized which can be used to **monitor** rapid changes in the free **Ca2**+ concn. ([Ca2+]) immediately **adjacent** to cell **membranes**. This indicator, referred to as C18-Fura-2, consists of a Fura-2 mol. conjugated to a lipophilic alkyl chain which will insert into cell membranes. When assocd. with cell membranes in low concns., C18-Fura-2 exhibits an excitation spectrum with a large Stokes shift and a single isosbestic point, thus [Ca2+] can be calcd. ratiometrically. The apparent Ca2+ dissocn. const. of cell-assocd. C18-Fura-2 is around 150 nM. C18-Fura-2 orients in the cell membrane so that the fluorophore is facing the side to which it was applied. C18-Fura-2 was used to record rapid changes in intracellular [Ca2+] which occurred in response to membrane depolarization in isolated smooth muscle cells. The initial rise of the [Ca2+] transient reported by C18-Fura-2 was four to six times faster than the rise of the [Ca2+] transient reported by cytosolic Fura-2. This result suggests that C18-

Fura-2 was located at the plasma membrane near sites of Ca2+ influx and indicates that membrane-assocd. Ca2+ indicators can be used to detect rapid, localized changes in [Ca2+] which are obscured in signals recorded using water-sol., bulk cytosolic fluorescent Ca2+ indicators.

```
=> log y
STN INTERNATIONAL LOGOFF AT 10:18:45 ON 01 JAN 2008

=> d his

     (FILE 'HOME' ENTERED AT 06:10:52 ON 01 JAN 2008)
     FILE 'REGISTRY' ENTERED AT 06:11:10 ON 01 JAN 2008
L1             STRUCTURE UPLOADED
L2             STRUCTURE UPLOADED
L3           0 S L1
L4           1 S L2
L5          20 S L2 FULL
     FILE 'CA' ENTERED AT 06:18:38 ON 01 JAN 2008
L6         336 S L5
L7        2340 S FLUO
L8          74 S L7 AND DERIVATI?
L9         301 S L6 AND(CALCIUM OR CA OR CA2)
L10          8 S L9 AND LEAK?
L11         80 S L9 AND MEMBRANE
L12         27 S L6 AND DERIVATI?
L13         93 S L6-7 AND MODIF?
L14        240 S L8,L10-13
L15        165 S L14 AND PY<2004
L16         40 S L14 AND PY<2006 AND PATENT/DT
L17          3 S L6 AND MINTA ?/AU
L18         10 S L6-7(5A)(DERIVATI? OR MODIF?)
L19         50 S L6-7(8A)(LEAK? OR MEMBRANE)
L20         49 S L18-19 AND PY<2005
     FILE 'BIOSIS' ENTERED AT 06:36:43 ON 01 JAN 2008
L21         50 S L20
     FILE 'MEDLINE' ENTERED AT 06:37:01 ON 01 JAN 2008
L22         38 S L20
     FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 06:38:45 ON 01 JAN 2008
L23        216 DUP REM L15 L16 L17 L20 L21 L22 (129 DUPLICATES REMOVED)

=> d bib,ab,kwic 1-216 l23

L23  ANSWER 16 OF 216  BIOSIS on STN
AN   2004:288730  BIOSIS
TI   Near-Membrane Ca2+ Measurement with Novel Fluorochromes in Arterial
     Myocytes.
AU   Cavalli, Maurizio [Reprint Author]; Lee, Moo Yeol; Ohkura, Masamichi;
     Song, Hong; Zhang, Jin; Kinsey, Stephen P; Nakai, Junichi; Kotlikoff,
     Michael I; Blaustein, Mordecai P
CS   Physiol, U Maryland Med Sch, 655 W. Baltimore St, Baltimore, MD, 21201,
     USA mcava001@umaryland.edu
SO   FASEB Journal, (2004) Vol. 18, No. 4-5, pp. Abst. 829.11.
     http://www.fasebj.org/. e-file.  Meeting Info.: FASEB Meeting on
     Experimental Biology: Translating the Genome. Washington, District of
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Columbia, USA. April 17-21, 2004. FASEB.

AB PLasmERosomes, Ca2+ signaling complexes, consist of certain plasma membrane (PM) microdomains, the subjacent "junctional" sarco- (or endo-) plasmic reticulum, and the intervening cytosol. Ca2+ concentrations in these tiny sub-PM cytosolic spaces ((Ca2+)SPM) are apparently regulated independently of the Ca2+ in bulk cytosol. Novel "near-membrane" Ca2+ indicators should enable us to measure (Ca2+)SPM and thereby study PLasmERosome function directly. Fluo-MOMO-AM (TefLabs, Austin, TX), a fluorochrome based on Fluo-4-AM, was loaded into intact rodent small mesenteric arteries (RSMA). Confocal microscopy verified that Fluo-MOMO is anchored to PM and organelle membranes by a hydrophobic tail, and that it detects cytosolic Ca2+ signals. We also generated PM-targeted derivatives of G-CaMP, a Ca2+-sensitive dye based on green fluorescent protein (Nakai et al., Nature Biotech. 19:137, 2001). We fused the gene for an improved G-CaMP (G-CaMP2; with increased quantum efficiency and extinction coefficient) to the C-terminus of the gene for the Na+ pump (1 subunit that is uniformly distributed in the PM. Plasmids were transfected into intact RSMA and primary cultured artery myocytes. Confocal and wide field imaging verified the PM localization of expressed protein and its ability to detect Ca2+ signals. A gene for G-CaMP2 fused to the Na/Ca exchanger isoform 1 that is confined to PLasmERosomes was also constructed.

L23 ANSWER 200 OF 216 CA COPYRIGHT 2008 ACS on STN

AN 112:135620 CA

TI Preparation and properties of calcium-specific, long-wavelength indicator dyes

IN Tsien, Roger Yonchien; Minta, Akwasi

PA University of California, Berkeley, USA

SO Eur. Pat. Appl., 27 pp.

PI	EP 314480 <--	A2	19890503	EP 1988-310120	19881027
	US 5049673 <--	A	19910917	US 1987-115921	19871030
PRAI	US 1987-115921	A	19871030		

OS MARPAT 112:135620

AB The title dyes I and II [E1, E2 = H, Me, Et, CH2OH, CO2H, CH2CO2H, or E1E2 = (CH2)mVCH2)n (sic; m, n = 1, 2; V = CH2, O, NH, NMe, S, SS); W = H, OH, CO2H; X = H, Me, CO2H, F, Cl, Br, I, NO2; Y = O, NMe, S, CH2, CMe2, CF2, C:O, bond; Z1, Z2, Z3, Z4 = H, F, Cl, Br, I, Me; Q1, Q2 = R1R2N, R1R2N:+, (R1, R2 = H, Me, Et), OH-, O2-, etc.] and their pharmaceutically acceptable nontoxic salts and esters are provided. Binding of Ca2+ increases the fluorescence of the above dyes by up to 40-fold. The Ca2+ dissocn. consts. are in the range 0.37-2.3 .mu.M, so that the indicators give better resoln. of high Ca2+ concns. than were previously obtainable with predecessor compds. The visible excitation wavelengths of I and II are more convenient for fluorescent microscopy and flow cytometry than the UV required by previous indicators. Thus, III was prepd. from reaction of 2,7-dichloro-3,6-dihydroxyxanth-9-one and an organolithium deriv. (prepn. given) of 1-(2-aminophenoxy)-2-(2-amino-5-phenoxy)ethane, followed by removal of tert-Bu groups. After purifn., extinction coeffs. were 7.9 .times. 104 and 8.3 .times. 104 M-1 cm-1 at 503 and 506 nm, resp., for free and Ca-bound III. Excitation and emission max. for III in the presence of excess Ca were 506 and 526

nm, resp.; quantum efficiencies in the absence of Ca and in the presence of excess Ca were 0.0051 and 0.183, resp. The fluorecence ratio of III in excess Ca vs. no Ca was 36-40. The effective dissocn. const. for Ca2 + was 0.45 .mu.M.

L23 ANSWER 201 OF 216 CA COPYRIGHT 2008 ACS on STN DUPLICATE 73
AN 111:53566 CA <<LOGINID::20080101>>
TI Fluorescent indicators for cytosolic calcium based on rhodamine and fluorescein chromophores
AU Minta, Akwasi; Kao, Joseph P. Y.; Tsien, Roger Y.
CS Dep. Physiol.-Anat., Univ. California, Berkeley, CA, 94720, USA
SO Journal of Biological Chemistry (1989), 264(14), 8171-8
AB A new group of fluorescent indicators with visible excitation and emission wavelengths was synthesized for measurements of cytosolic free Ca2+. The 5 compds., rhod-1, rhod-2, fluo-1, fluo-2, and fluo-3, combine the 8-coordinate tetracarboxylate chelating site of 1,2-bis(2-amino-phenoxyethane-N,N,N',N'-tetraacetic acid with a xanthene chromophore to give a rhodamine-like or fluorescein-like fluorophore. Binding of Ca2+ increases the fluorescence by up to 40-fold. The Ca2+ dissocn. consts. are in the range 0.37-2.3 μM so that the new indicators should give better resoln. of high [Ca2+] levels than previously obtainable with quin-2 or fura-2. The visible excitation wavelengths of the new compds. are more convenient for fluorescence microscopy and flow cytometry than the UV required by previous indicators. However, the increase in fluorescence of the new dye upon binding Ca is not accompanied by a wavelength shift, so they are unsuitable for measurements using ratios at 2 wavelengths. The most promising dye of this series is fluo-3, which was tested in fibroblasts.

=> log y
STN INTERNATIONAL LOGOFF AT 06:41:47 ON 01 JAN 2008